

**REGIONAL COMPREHENSIVE PLAN  
TRANSPORTATION CHAPTER  
Draft June 2005**

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**INTRODUCTION**

The *Transportation* chapter of the Regional Comprehensive Plan (RCP) is a compendium of actions and policies based on the adopted 2004 Regional Transportation Plan (RTP). It offers an action plan for implementation of strategies in support of the policies adopted by the SCAG Regional Council.

The 2004 RTP establishes a transportation vision for an area that includes Los Angeles, Orange, San Bernardino, Riverside, Ventura and Imperial Counties. RTP is a multi-modal Plan representing a vision for a better transportation system, integrated with the best possible growth pattern for the Region over the Plan horizon of 2030. The Plan provides the basic policy and program framework for long term investment in our vast regional transportation system in a coordinated, cooperative and continuous manner.

**BACKGROUND**

SCAG, as the designated Metropolitan Planning Organization (MPO), is responsible for developing, coordinating, monitoring and updating the RTP for the six-county Region in Southern California. SCAG develops the RTP in coordination and consultation with the county transportation commissions, subregional councils of governments (COG), transit operators and other transportation stakeholders. To ensure a balanced, multi-modal plan that meets regional as well as county-specific goals, SCAG integrates the planning activities of each of the counties in the Region. Five of the six counties in the SCAG Region have a transportation commission or authority. In Imperial County, the Imperial Valley Association of Governments (IVAG) serves as the countywide transportation

agency. These agencies are charged with implementing countywide transportation planning activities, allocating locally generated transportation revenues and, in some cases, operating of transit services.

In addition, there are 14 subregions within the SCAG Region. The subregions are groups of neighboring cities and communities (sometimes comprising an entire county) that work together to identify, prioritize and seek transportation funding for needed investments in their respective areas.

## **A. CHALLENGES / ISSUES**

### **1) Infrastructure Capacity versus Future Growth**

The population in the SCAG Region was more than 17 million in 2000, representing 6% of the national population. The Region grew by 1.9 million persons, or 13%, during the 1990s. The ring of counties around Los Angeles had the highest population growth rates during the last decade. Riverside grew 32% to 1.6 million, San Bernardino 20.5% to 1.7 million, and Orange 18.1% to 2.8 million. All outstripped growth rates in Los Angeles County – up 7.4% to 9.5 million. Even a modest growth rate in Los Angeles County accounted for slightly over one-third of the Region's population growth over the last decade.

The Region's transportation system has not kept up with population and transportation demand. Each major transportation mode in our system faces challenges meeting the growth that the region is facing. The Region has invested heavily in transit in the past thirty years and yet the transit ridership has not increased proportionately. While population has more than doubled from 1960 to 2000, our freeway capacity increased by less than 30%. Consequently, our Region's congestion has increased dramatically, affecting both person travel and goods movement. For year 2000, total daily delay due to congestion was estimated to be 2.2 million person hours. If current trends persist, this delay is expected to double to 5.2 million person hours of daily delay by 2030. Moreover our infrastructure is aging and requires more investment in maintenance and preservation.

The Southern California region is facing a crisis in transportation goods movement, characterized by a dramatic growth in rail and truck traffic, scarce financial resources, and the high costs of infrastructure improvements. Forecasts of greater regional population and employment, and projects of increasing international and domestic trade volumes, all lead to worsening congestion and the potential of gridlock occurring within the Region's surface transportation system. Almost all of the short-haul and significant share of medium- and long-haul movement of goods occurs by truck. Severe congestion due to truck traffic is expected to worsen in the Region's major transportation corridors.

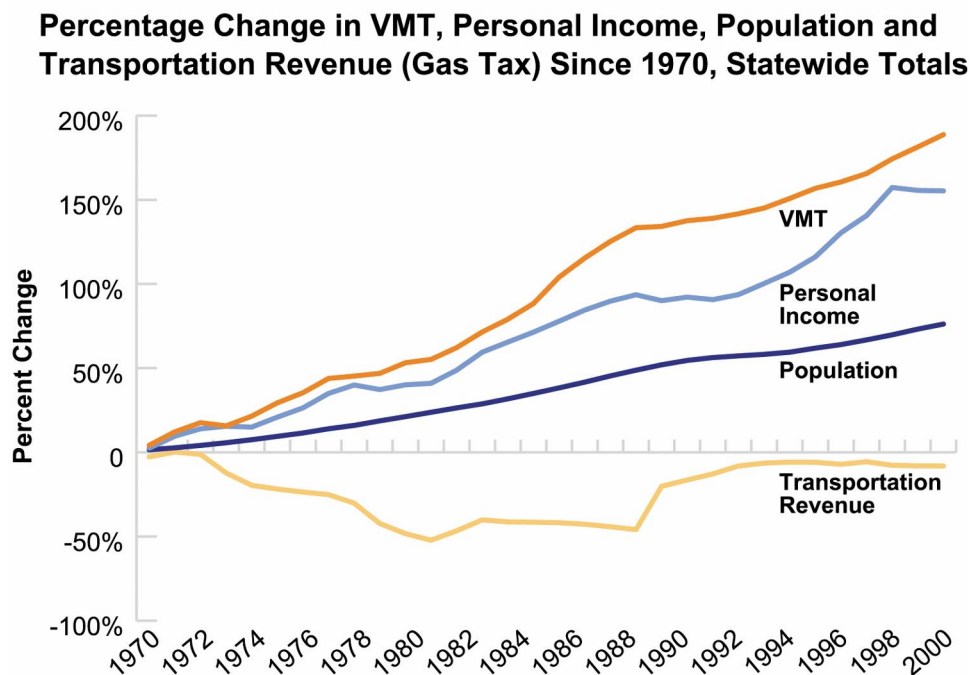
Airports play an important role in passenger and goods movement, as air cargo is transported in either passenger aircraft belly-holds or in dedicated freight aircraft used primarily for high-value, time-sensitive shipments. However, even with the ten commercial service airports, the majority of passenger traffic is handled at just a few airports. For air cargo, the majority is handled at just one (Los Angeles International). Without airport decentralization along with innovative ground access improvements, regional aviation will suffer.

## 2) Decline in Transportation Funds

### Gas Tax Revenues

For the past 30 years, transportation revenue in California has generally not kept pace with the State's evolving demographic characteristics. Indicators such as vehicle miles traveled, population, and personal income growth have all outpaced the rate of transportation revenue growth. Figure 1 below, shows how gas tax revenues have fluctuated in real-dollar terms (adjusted to inflation) in relation to the steady growth in the demographic indicators. The passage of local "self-help" transportation sales taxes in the late 1980s and early 1990s have greatly improved funding for transportation. Nevertheless, gas tax revenues continue to decline in value due to inflation.

Figure 1



Sources: Caltrans, U.S. Department of Labor, California Department of Finance

### Local Transportation Sales Taxes

Local sales taxes have provided nearly half of the local share of transportation funding in the Region. While Los Angeles County has two permanent sales taxes for transportation and Riverside County more recently managed to gain voter approval for a 30-year extension, the measures in Imperial, Orange, and San Bernardino Counties expire in the next seven to nine years. If the voters do not renew these sales taxes, the expiration of these taxes will have a profoundly negative impact on the ability of these counties to fund ongoing maintenance and operations, let alone transportation improvements.

Despite the success of Riverside County, similar measures in other California counties have failed to receive the two-thirds voter approval required for extension. Subject to Proposition 218 and in accordance with a California State Supreme Court decision, a two-thirds approval by county voters is required to reauthorize, increase, and/or impose new local sales taxes for transportation. These (half-cent) sales taxes are in addition to the sales and use tax levied statewide, and are generally imposed upon the same transactions and items subject to the statewide sales and use tax.

### Loss of Revenues from Reduced Gasoline Consumption

During the period of the 2004 RTP, technological advancements, along with State and federal air quality mandates placed on the SCAG Region, may result in a motor vehicle fleet that consumes considerably less gasoline or relies on alternative energy sources. This would erode the revenues generated by gasoline sales and diminish the gas tax as a reliable source of revenue for transportation. Other factors, such as scarcity or dependency on foreign sources, may also affect the availability of petroleum-based fuel. In recognition of difficulties in developing cost-competitive alternative fuel vehicles, a sizeable alternative fuel vehicle market will not likely appear in the immediate future. Nevertheless, the long-term implications require further research and analysis.

### State Budget Crisis and the State Highway Account Shortfall

California's budget crisis may continue to have significant impacts on transportation funding for the SCAG Region. Many transportation projects will be affected, including Transportation Congestion Relief Program (TCRP) project commitments, the STIP, State Transit Assistant (STA) for transit operators, and associated formula funding allocations for local streets and roads. Additionally, the State Highway Account (SHA) cash balance is projected to fall below planned levels primarily from lower-than-expected truck weight fee revenues and gas tax receipts.

## **3) Meeting Our Air Quality Commitments**

The SCAG Region has experienced cleaner and healthier air quality over the past two decades, from collaborative efforts over the years to reduce emissions from stationary and mobile sources. However, even with these efforts, much of the Region continues to exceed the National Ambient Air Quality Standards (NAAQS) and large portions of Southern California still have worst air quality in the nation.

Most of the SCAG Region is classified as non-attainment for some criteria pollutants. The South Coast Air Basin (SCAB), being the worst, is classified as an "extreme" non-attainment area for ozone, and is required to meet the federal 1-hour ozone standard by 2010. The SCAB is also classified as a "serious" non-attainment area for particulates (PM<sub>10</sub>), and is required to meet the PM<sub>10</sub> standards by 2006. In addition, the new federal standards for 8-hour ozone and fine particulate matter (PM<sub>2.5</sub>), currently in the process of being implemented, will require significant emission reductions beyond those required to attain the existing standards.

Improvements in modeling have resulted in higher air emissions inventory and targets. The magnitude of the required emissions reductions reported in the 2003 South Coast Air Quality Management Plan (SCAQMP) is far greater than that reported in previous air quality plans. The emissions target, also known as the "carrying capacity," has tightened and the mobile source emissions inventory has increased. This all equates to a need for greater emissions reductions. However, it is important to note that the

increase in required emissions reductions does not mean that measured air pollution in the Region has increased.

There are only a few years remaining to identify and achieve the emissions reductions required for attainment. Under Section 182(e)(5) of the federal Clean Air Act, extreme ozone non-attainment areas are allowed to allocate emissions reductions to long-term, unidentified measures such as anticipated future technologies, commonly referred to as “black box” measures. However, reliance on the “black box” measures will cease in the near future, as measures need to be identified by 2007 and emissions achieved by 2010.

Failure to implement an adequate State Implementation Plan (SIP) could result in federal sanctions, such as a ban on approval of new highway projects and a loss of highway funding, as well as more stringent emissions offsets for stationary sources. At this time, the responsible agencies have not been able to identify the needed emissions reductions to meet attainment of the federal standards. This emissions reduction shortfall presents a significant challenge to the Region, as most of the substantial and feasible emissions reductions have already been implemented. To put it bluntly, the Region is starving for emissions reduction strategies, and there is an urgent need for new and innovative solutions.

Many challenges lie ahead as the Region continues to grow. This is most evident from the severity of the 2003 ozone season. In 2003, the SCAG region experienced its first Stage 1 ozone alert since 1998. This type of alert warns even healthy residents to curtail outdoor activities. The severity of the 2003 ozone season has been attributed to meteorological conditions, regional socioeconomic growth and the recent upsurge in the operation of sport utility vehicles (SUVs).

## **B) EXISTING CONDITIONS**

Since 1990, the Region has consistently been ranked as the most congested metropolitan region in the nation. The 2002 State of the Region report indicates that the Region’s performance is mixed. Vehicle Miles Traveled (VMT) almost doubled between 1990 and 2000. Total transit boardings increased 7% over 1999 (up continuously since 1995), while annual bus miles decreased by one million in Los Angeles County. The average journey to work travel time increased in every SCAG County with a regional average increase from 26 to 29 minutes. Finally, the transportation to work mode of choice in the Region remained essentially unchanged during the 1990s with 72% of workers driving to work alone.

Within the Region, Los Angeles County has the lowest rate of commuters who drive alone to work, while Orange and Ventura Counties have the highest rates. San Bernardino, Riverside and Imperial Counties showed noticeable improvements in reducing the Single Occupancy Vehicle (SOV) commute.

Biking and walking primarily constitute non-motorized transportation. Bikeways and pedestrian paths can play a significant role in meeting the transportation needs of our Region at the local level. Particularly, non-motorized transportation plays a bigger role in the densely populated mixed land-use area and corridors.

Non-motorized transportation, by its very nature, is more effective at a local level in communities that are densely populated and have a good mix of land-uses, including commercial, residential and institutional. Non-motorized transportation mainly serves as a recreational mode at the regional level. Unless substantial investments in non-motorized transportation are coordinated with other modes and land-uses, it would be very difficult to gain a significant increase in mode share of the work trips for non-motorized transportation in 2030.

The region's bikeways encourage non-motorized commutes, serve as recreational facilities and provide inexpensive, environmentally friendly transportation opportunities. More than 2,000 miles of Class I and II bikeways exist just between Los Angeles and Orange Counties. In addition, the Region is served by an extensive network of mountain bike trails, which are also designated for hiking and horseback riding. A Class I bikeway has a right-of-way completely separated from any street or highway for bicycle travel. A Class II bikeway has a striped lane for one-way bicycle travel on a street or highway.

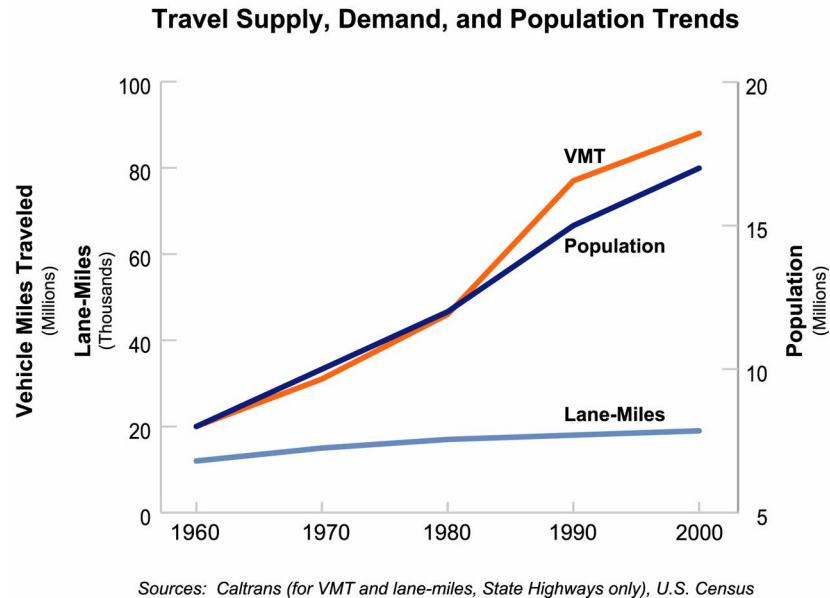
According to the 1990 Census, biking and walking accounted for approximately 0.7 and 3.0% of total work trips, respectively. SCAG's State of the Commute report indicates that biking and walking have hovered around 0.5 and 1.5%, respectively, in the 1990s.

Some progress is being made in the rideshare area. Among the nine largest metropolitan regions in the nation, the SCAG Region had the highest share of workers who carpooled to work in 2000. However, the rate of growth for teleworkers slowed during the 1990s.

### Highways and Arterials

Both industry and residents are served by a vast transportation network that includes over 9,000 lane miles of freeway, more than 42,000 lane miles of arterials, several large public transit systems, four major airports (including the world's fifth largest), as well as the largest maritime ports system in the United States. Yet the Region's transportation system has not kept pace with population and transportation demand. Figure 2 illustrates this point.

Figure 2



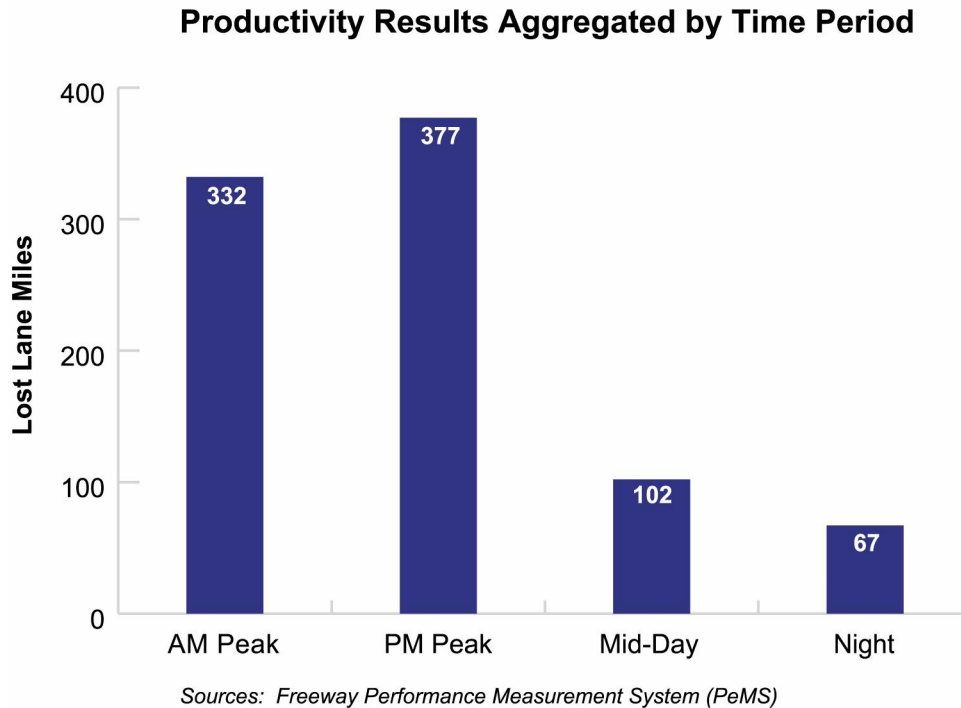
While population more than doubled from year 1960 to year 2000, our State highway miles increased by less than 90%.

Consequently, our Region's congestion has increased dramatically, affecting both person travel and goods movement. The vast majority of trips (99%) rely on the highway and arterial network regardless of whether they are made using automobiles, buses, vanpools, trucks or bikes. The regional and local highway system faces mounting congestion that affects personal mobility, freight movement and air quality. The preservation, management and selective expansion of this system are crucial to maintaining the Region's economic vitality and quality of life.

For year 2000, total daily congestion delay was estimated to be 2.2 million person-hours. If current trends persist, this delay is expected to more than double to 5.4 million person-hours. Reasons for delay and congestion vary and include driver behavior, accidents, weather, special events, and lane closures, among others. However, these reasons are all intricately linked to overall highway productivity. The roadway system loses its productivity when it is unable to serve the number of vehicles that it is designed to serve. This occurs at major interchanges (or accident locations) that are often referred to as bottlenecks. The resulting productivity loss of the system occurs only during peak demand periods. So in effect, when demand is highest, system capacity actually decreases. Figure 3 presents the results of an analysis based on real traffic counts around the Region's freeway system to estimate the lost productivity in the SCAG Region for the morning and afternoon peak demand periods as well as mid-day and night periods. The "Lost Lane Miles" shows the equivalent lost capacity due to the lost productivity the system experiences. The PM Peak productivity loss of almost 380 lane miles represents an investment of almost \$8 billion if the Region were to replace them with expansion projects.



Figure 3



### Public Transportation

Starting in the early 1980s, the Region, and Los Angeles County in particular, embarked on an aggressive path of transit system development. Many of these projects (e.g., Metro Blue Line, Red Line, and Metrolink) have been completed and now provide meaningful choices to the residents of this Region.

Yet even these critical projects did not reduce demand on our arterial and freeway systems. Figure 4 demonstrates this point shows the trend of transit usage in the Region from year 1985 to year 2000. Note that transit ridership has been increasing significantly since 1995, in large part due to the completion of the aforementioned transit systems. Yet the total transit ridership in the Region is only slightly above the ridership in 1985. Transit ridership increases since 1995, once normalized with overall population growth, are somewhat less impressive. Figure 5 shows transit trips per capita over the same period. Note that the overall increase in transit trips per capita per year in Figure 5 is less than the total transit trips in Figure 4. In fact, on a per capita basis, the Regions' transit ridership is still lower that 1985 levels.

Figure 4

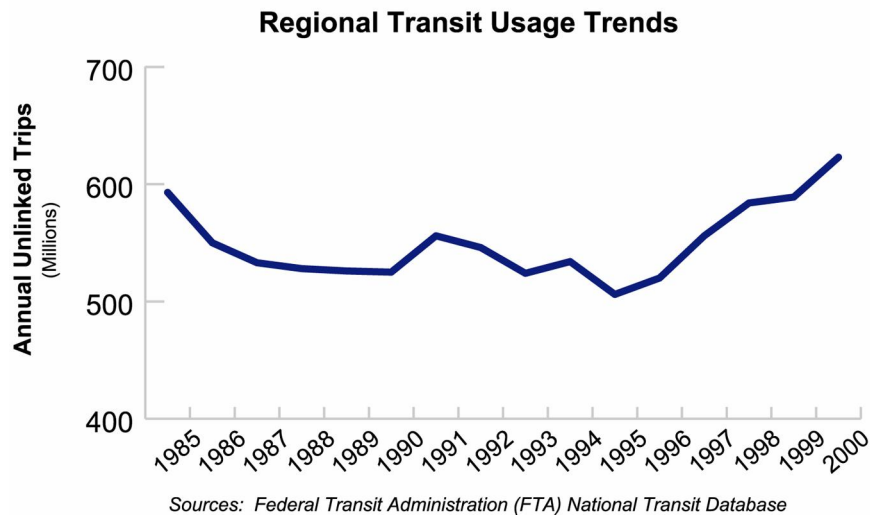
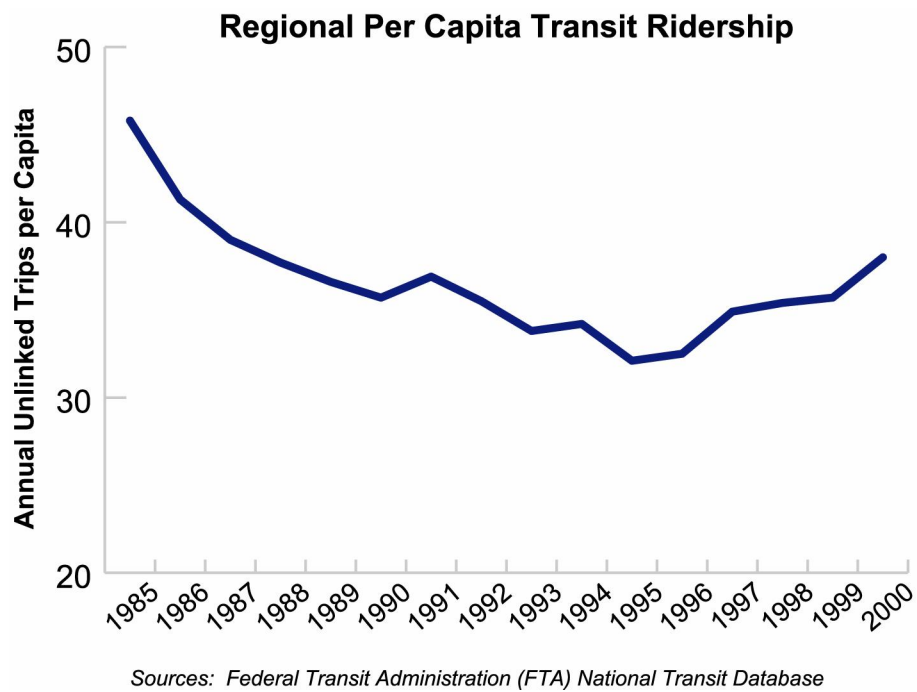


Figure 5



Recent strategies are showing promise. This is especially true for Bus Rapid Transit projects in Los Angeles County. During July 2000, because of new Bus Rapid Transit routes, Metro Bus ridership reached its highest point in more than six years, averaging over 1.25 million boarding patrons, compared to 1 million carried a year earlier.

Similar to highways and arterials, the productivity of transit services is not optimal. Table 2.3 shows the average utilization of the different transit services in the Region. As the table shows, transit utilization as measured by available seat miles is generally less than 50% (except for light rail in Los Angeles). It is clear that transit around the world never approaches 100% utilization. In fact, the table would look different if only peak utilization were presented. However, such data are not available. Table 1 demonstrates the potential for improvements through strategies that increase ridership for current and/or restructured transit services.

Table 1

### Transit Service Utilization in the SCAG Region (Percent utilization of available seat miles)

<b>County</b>	<b>Commuter Rail</b>	<b>Demand Response</b>	<b>Heavy Rail</b>	<b>Light Rail</b>	<b>Bus</b>
Los Angeles	34%	11%	35%	59%	34%
Orange		13%	N/A		27%
Riverside		9%			26%
San Bernardino		12%			33%
Ventura		16%			22%

Sources: Federal Transit Administration (FTA) National Transit Database

### Goods Movement

The Region is facing a crisis in goods movement transportation, characterized by dramatic growth in rail and truck traffic, limited transportation funding, and high infrastructure improvement costs. Forecasts of greater regional population and employment, and projections of increasing international and domestic trade volumes, all lead to worsening congestion and the potential of gridlock on the Region's surface transportation system.

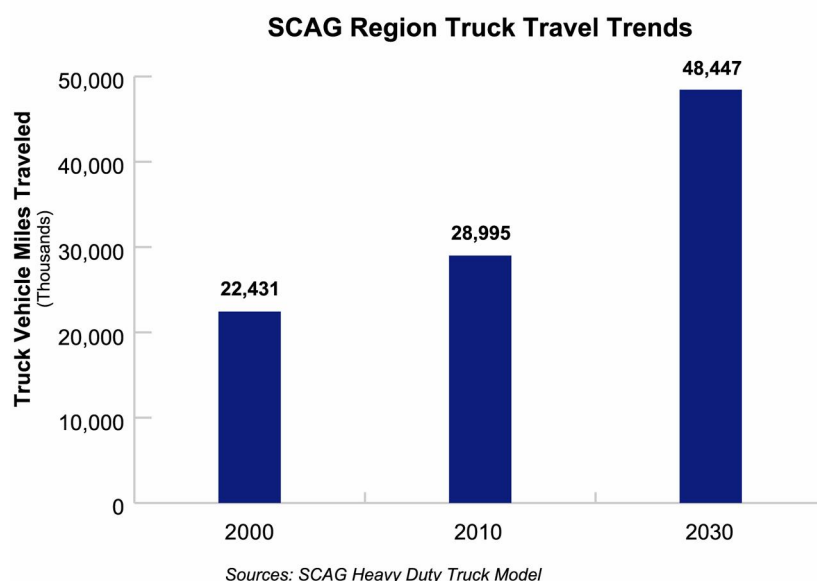
### Truck Travel

Almost all of the short-haul and a significant share of medium-and long-haul movement of goods occurs by truck. Most trucks share our roadway network with other vehicular traffic. SCAG's Heavy Duty Truck Model (HDT) estimates that this network carried 795,000 average daily trips in 2002. This equates with 25,500,000 of vehicle miles traveled (VMT). Projected regional truck VMT is shown in Figure 6.

Examples of freeways with heavy truck volume include the I-710, SR-60 and I-15.

- At SR-60 east of Azusa Avenue in Los Angeles County, average daily truck volume exceeded 31,000 trips, which is almost 14% of total daily traffic.
- At SR-60 east of Euclid in San Bernardino County, truck volume totaled 36,000 trips, almost 18% of total traffic.
- Through Cajon Pass, I-15 north of SR-138 carries over 14,200 trucks per day (13% of total traffic), with the major being 5-axle trucks (indicative of large-load, long-haul trucking).
- Along I-15 just south of the I-10 interchange, average daily truck volume totaled over 25,000 trips, which is almost 17% of total daily traffic.

Figure 6



### Freight Railway System

The freight railway system is critical to the SCAG Region. Rail transportation services for goods movement are provided in the SCAG Region along five principal rail alignments. These alignments are owned by the two Class 1 railroads operating in the Region: The Union Pacific Railroad (UP) and the Burlington Northern Santa Fe (BNSF). The majority of freight rail operations moves along the mainlines of each railroad—the San Bernardino Subdivision between Barstow and downtown Los Angeles for BNSF, and the Los Angeles Subdivision and Alhambra Subdivision for UP. The BNSF San Bernardino Subdivision includes 46.4 miles of double track; 16.6 miles have triple tracks; and 1.5 miles are covered by four main tracks. The UP Los Angeles subdivision includes 12.4 miles of single track with sidings (additional track that allows a train to move to one side so other trains may pass), 42.3 miles of double track (3.1 miles

shared with BNSF), and 4.2 miles of triple track (on a portion of route shared with BNSF). The UP Alhambra line has 38.6 miles of single track with siding, and 21.9 miles of double track (*Los Angeles-Inland Empire Railroad Mainline Advanced Planning Study, October 2002*).

To facilitate freight railway services, improve safety, and reduce travel time for person movement, the Region invested in an ambitious large-scale grade separation project over the past decade. The Alameda Corridor, which opened in April 2002, provides grade separation along an existing at-grade railway that connects the Ports of Long Beach and Los Angeles to rail yards in downtown Los Angeles. The corridor provides grade separations at 200 street-rail intersections, reducing vehicle-train delay an estimated 90%. Other benefits include a 90% reduction in noise and vibration, a 28% reduction in railroad emissions, and a 54% reduction in emissions from automobiles and trucks idling at railroad crossings. Cargo transport has been expedited as train speeds has doubled and travel time to downtown Los Angeles reduced.

Table 2 shows that the east-west freight and passenger rail demand between Los Angeles and the Inland Empire is projected to more than double. This calls for additional railway improvements to accommodate this future demand.

Table 2

### **East-West Rail Demand Forecast (Average Daily Trains)**

<b>County</b>	<b>2000</b>	<b>2010</b>	<b>2030</b>
<b>Freight</b>	112	165	283
BNSF	57	80	136
UP	55	85	147
<b>Passenger</b>	58	100	158
BNSF	46	75	113
UP	12	25	45
<b>Total – All Trains</b>	170	265	441

Sources: SCAG, LA – Inland Empire Railroad Mainline Advanced Planning Study, 2002

### **Maritime Ports and Waterways**

International trade through the Los Angeles Customs District is expected to nearly triple on an annual basis from \$230 billion to \$661 billion between the years 2000 and 2020. The deepwater ports of Los Angeles and Long Beach constitute a significant portion of

the trade activities in this district, and, together with the third regional port of Hueneme, handle 80% of California's and 35% of the nation's waterborne international trade. These ports are planning to invest \$6 billion over the next 25 years on an ambitious infrastructure development program that will include widening arterial streets, upgrading freeway ramps, separating railroad grades from roadways, expanding rail yards, and adding intelligent transportation systems (ITS) to improve ground access management.

The competitive position of the Region's ports is very strong. As of 2002, these ports accounted for about 62% of total West Coast container traffic, rising from 51% nine years earlier. The San Pedro Bay (SPB) Ports possess between one-third and one-half of the West Coast container terminal capacity. These ports are served by almost half of the rail intermodal terminal capacity devoted to handling international container traffic to and from West Coast ports.

Approximately 44% of the total 1996 Asia-to-U.S. container cargo routed through West Coast ports terminated in California or Nevada, yet only about 17% was expected to do so based on these states' share of total continental U.S. population (and based on the assumed East Coast share of Asian trade). That is, traffic to/from California and Nevada was two-and-one-half times the amount expected based on population. A smaller value assumed for the East Coast ports' share would drive the value of this multiplier even higher. It is simply not plausible that all of this cargo was consumed or produced in these two states.

One explanation for this seeming anomaly is that much of the import traffic "terminating" in California actually underwent "value-added" transformation ranging from insertion of hangers in garments to use as assembly components in larger manufactured goods. These transformed goods, along with cargo that is loaded into trucks or domestic containers for re-shipment to other regions after processing in a distribution center, are subsequently shipped elsewhere in the U.S. as domestic freight and contribute to this traffic shift. Such re-shipments put pressure on the Region's transportation system. The Region is, therefore, subsidizing other states by enduring incremental congestion and pavement deterioration from truck movements that are "passing through" at ever-increasing rates.

### Air Cargo

Airports play an important role in goods movement, as air cargo is transported either in passenger aircraft belly-holds or in dedicated freight aircraft used primarily for high-value, time sensitive shipments. In 2002, 2.6 million tons of air cargo were handled by the Region's airports.

### Air Cargo Terminals

Regional air cargo has grown at an average annual rate of 6.6% since 1965. Los Angeles International (LAX) and Ontario International (ONT) are the major cargo-handling airports, transporting about 96% of all regional air cargo, with LAX alone

accounting for 75% of the traffic. ONT air cargo traffic has increased by seven times since 1979, while LAX has doubled in the same period. Bob Hope, John Wayne, Long Beach and Palm Springs handle substantially less cargo. The air cargo trend since 1975 is shown in Table 3.

Table 3

**Historical Air Cargo Tonnage**  
(x 000)

	<b>1975</b>	<b>1980</b>	<b>1985</b>	<b>1990</b>	<b>1995</b>	<b>2000</b>	<b>2002</b>
Bob Hope	0	0	7	20	36	37	43
John Wayne	0	0	0	0	16	18	15
Long Beach	0	1	4	19	27	52	59
Los Angeles	715	882	929	1,284	1,761	2,249	1,959
Ontario	3	5	176	246	387	511	547
Palm Springs	0	0	0	0.4	0.2	0.1	0.1
<b>Total</b>	<b>718</b>	<b>888</b>	<b>1,116</b>	<b>1,570</b>	<b>2,227</b>	<b>2,867</b>	<b>2,623</b>

Sources: Compiled by SCAG from individual airports

LAX is the primary cargo airport. Cargo facilities operated by airlines and cargo shippers occupy two million square feet of building space on about 200 acres of land. The total land area of LAX (including parking) is 3,500 acres. A significant number of off-airport freight forwarding facilities are also located in proximity to the airport. The majority of air cargo passes through LAX primarily because shippers are able to rely on commercial passenger air carriers for spot or contracted cargo transport. Approximately 38% of LAX air cargo is carried in the bellies of passenger aircraft, part of a gradual decline as more cargo is moved to dedicated air freighters, which now account for 62% of LAX air freight.

More than 70% of all air cargo in the Region is now shipped on dedicated freighter aircraft, as compared to 59% in 1994. The continuing shift of cargo from the belly-holds of passenger planes to dedicated all-cargo freighters has enhanced the ability of these airports to serve cargo. However, because of the large number of cities served by passenger airlines out of LAX, cargo shippers are able to offer worldwide service without having to operate dedicated freighters.

ONT handled 21% of regional air cargo in 2002. Owned by the City of Los Angeles and operated by Los Angeles World Airports (LAWA). ONT occupies 1.463 acres and is well situated within the regional ground transportation system. United Parcel Service (UPS) operates an express package service hub out of ONT. Ninety-eight percent of air cargo is handled through dedicated air freighters.

The air cargo industry was significantly impacted by the September 2001 terrorist attacks. The Transportation Security Administration (TSA) mandated that U.S. mail over 16 ounces could no longer be carried in the belly compartments of passenger aircraft. This restriction, as well as a recent tightening of the “known shipper” requirement, has limited the amount of air cargo carried on passenger aircraft.

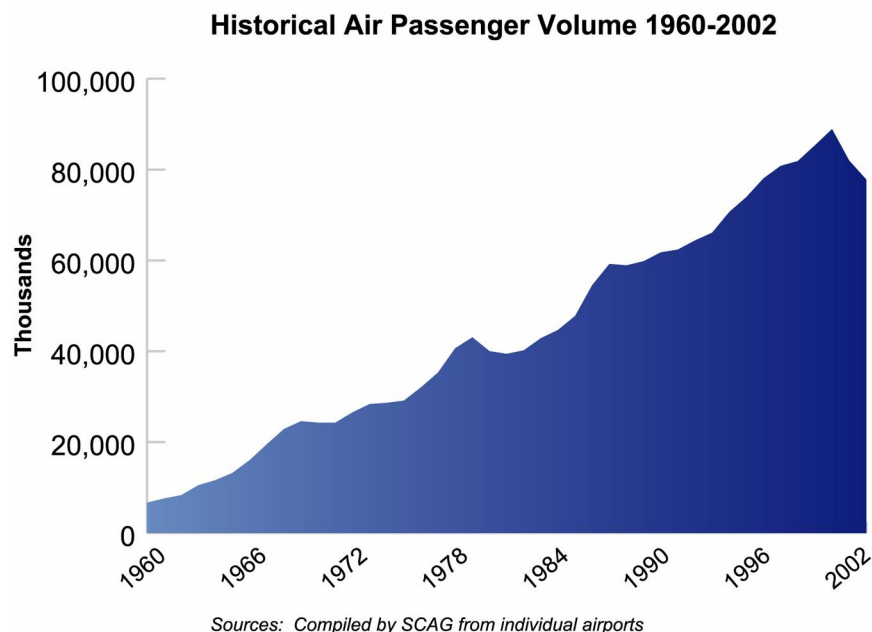
Another key issue is surface congestion. With the majority of regional air cargo served by only two airports, the ability of the already crowded surface transportation infrastructure to accommodate the air cargo demand is limited. To complicate matters, the San Diego Region sends two-thirds of its air cargo to SCAG regional airports for shipping. Orange County, which generates 30% of regional air cargo, serves less than three percent of this amount.

The impact on ground transportation of freight movement to and from the airports is significant. The focus of new commercial airports such as March, Southern California Logistics and San Bernardino International on initially serving freight helps to relieve the pressure on LAX and ONT and serves the goal of decentralizing regional air services.

### **Aviation**

The SCAG Region has 57 public use airports, including six commercial service airport, 45 general aviation, two recently closed military air bases (one certified as a commercial service airport, the other focusing on cargo), two commuter airports and two joint-use facilities. In all, some 78 million annual passengers (MAP) were served in the Region in 2002, almost double the number served in 1980, as shown in Figure 7. The level of air passenger demand is forecast to double again before 2030.

Figure 7





The Region's aviation operational activity, including general aviation and military, makes Southern California the busiest of all region in the country. There are eight airport governing bodies responsible for planning and operating their individual airports in the proposed ten (commercial) airport system. These airports are:

- Bob Hope (BUR)
- John Wayne (SNA)
- Los Angeles International (LAX)
- Long Beach (LGB)
- March Inland Port (WAR)
- Ontario International (ONT)\*
- Palm Springs (PSR)
- Palmdale Regional (PMD)\*
- San Bernardino International (SBD)
- Southern California Logistics (SCL)

\* Operated by Los Angeles World Airports

General aviation airports are most often operated by the city or county where they are located. Sometimes a private entity owns the airport.

Currently, six commercial service airports handle the majority of passenger air traffic: Bob Hope, John Wayne/Orange County, Long Beach, Los Angeles International, Ontario International and Palm Springs. Limited commercial service exists at Oxnard and Imperial County airports. Passengers are currently concentrated at the urban airports with LAX serving almost 72% of the regional total. This air service concentration at LAX creates severe airport ground access problems. With worsening highway congestion in the future, LAX will become increasingly difficult to access for international passengers and air cargo.

Both the recent recession and the impacts of September 11, 2001, are still being felt in the aviation industry. The terrorist acts fundamentally changed the way airports and air travelers think about security and safety, while the recession changed the way business travelers purchased air Travel. After the attacks, the number of regional air travelers dropped dramatically. Starting in 2002, airports in the Region started to show signs of recover. Smaller regional airports like Bob Hope, Ontario and John Wayne are almost at, or have exceeded, pre—September 11 passenger numbers. International travel suffered the most from September 11 and, more recently, from the outbreak of the SARS disease in Asia, slowing passenger activity at LAX. In 2005, LAX appears to be approaching pre-2001 passenger levels.

The urban airports will reach their physical or legal capacity within the forecast period. The airports are all encroached by neighboring land-uses and have little room to expand without generating significant environmental impacts and community opposition. While the urban airports are all constrained, the suburban airports all have capacity, which is available to serve projected regional growth in demand.

The economic costs of doing nothing are substantial. For every one million regional air passengers, it is estimated that there is a positive regional economic impact of \$620

million (in 1998 dollars) and 4.475 jobs. SCAG estimates that under a fully constrained aviation system, only 141 million passengers would be served in 2030.

## **C) GOALS & POLICIES**

The 2004 RTP established a transportation vision for an area that includes Los Angeles, Orange, San Bernardino, Riverside, Ventura and Imperial Counties. RTP is a multi-modal plan representing a vision for a better transportation system, integrated with the best possible growth pattern for the Region over the Plan horizon of 2030. The Plan provides the basic policy and program framework for long term investment in our vast regional transportation system in a coordinated, cooperative and continuous manner.

### **RTP GOALS**

The goals established for the 2004 RTP reflect the Region's focus on a balanced approach to transportation planning and decision-making:

- Maximize mobility and accessibility for all people and goods in the region
- Ensure travel safety and reliability for all people and goods in the region
- Preserve and ensure a sustainable regional transportation system
- Maximize the productivity of our transportation system
- Protect the environment, improve air quality and promote energy efficiency
- Encourage land use and growth patterns that complement our transportation investments

### **ADOPTED POLICIES**

The following policies were adopted by the SCAG Regional Council to guide the development of the 2004 RTP and further reflect the transportation priorities for the Region:

- Transportation investments shall be based on SCAG's adopted Regional Performance Indicators.
- Ensuring safety, adequate maintenance, and efficiency of operations on the existing multi-modal transportation system will be RTP priorities and will be balanced against the need for system expansion investments.
- RTP land use and growth strategies that differ from currently expected trends will require a collaborative implementation program that identifies required actions and policies by all affected agencies and subregions.

- HOV gap closures that significantly increase transit and rideshare usage will be supported and encouraged, subject to Policy #1.

Progress monitoring on all aspects of the Plan, including timely implementation of projects, programs, and strategies, will be an important and integral component of the Plan.

## **D) ACTION PLAN**

### **SYSTEM IMPROVEMENTS**

In coordination and cooperation with Caltrans and the County Transportation Commissions, the Region must maximize the productivity of its transportation system through:

- Flow-improving infrastructure modifications – also referred to as physical operational improvements.
- Freeway service patrol to facilitate removal of stalled vehicles.
- Dedicated Truck lanes
- Transportation management systems, including: incident management systems; traveler information systems; ramp metering systems; arterial signal management systems;
- Physical improvements to the transportation system must consider safety improvements by investing in improvements such as the extension or addition of auxiliary or merging lanes, allowing a safer transition in traffic flow.

### **TDM - NON-MOTORIZED**

SCAG should continue to promote and support the efforts of the region's Transportation Commissions and encourage them to:

- Maintain and increase the existing rideshare market and increase the number of carpools annually through increasing programming of public funding.
- Formalize and expand partnerships among public and private sector stakeholders to improve delivery of vanpool services regionally
- Establish a dedicated funding source for planning and implementing vanpool programs and services.
- Expand the provision of vanpool services in the Region through an increase in dedicated public-sector staffing and resources
- Facilitate a regionally coordinated marketing strategy among the public and private sectors to enhance vanpool programs, increase ridership and improve outreach efforts

- Formalize and expand partnerships among public and private sector stakeholders to increase opportunities for wage and salary workers regionally to telecommute in lieu of daily commuting
- Explore the opportunity to develop and to disseminate educational programs at the county and community level that promote consumers' use of non-motorized travel modes for non-work trips made during commute hours
- Explore partnerships among public and private sector providers of medical, shopping, school, recreation and related services and programs to identify alternative modes of travel to their establishments and to evaluate their ability to offer consumer services during non-commute hours
- Implement bikeway expansion projects, create a bicycle and pedestrian-friendly transportation environment, and induce mixed-use development that promotes biking and walking.

## **LAND USE**

Region's transportation and planning agencies in cooperation and coordination with local jurisdictions should promote policies and strategies that further integrate land use and transportation. The region's cities and counties should:

- Use infill where appropriate to revitalize underutilized development sites.
- Focus growth along transit corridors and nodes to utilize available capacity.
- Provide housing opportunities near job centers, and job opportunities, when appropriate, in housing-rich communities.
- Provide housing opportunities to match changing demographics.
- Ensure adequate access to open space.
- Change land-use to correspond to the implementation of a decentralized regional aviation strategy and its consequent short- and long-term job creation.
- Change land-use to correspond to the implementation of regionally significant major transportation projects and their consequent short- and long-term job creation.

The State should provide incentives for local jurisdictions to identify and integrate land-use/transportation efficiencies and integration for their particular locations.

## **HIGHWAYS AND ARTERIALS**

The Federal Highway Administration and Caltrans should provide the financial support necessary for local jurisdictions to improve the region's highway network. The funding would provide for implementation of:

- HOV gap closures
- HOV connectors
- Dedicated truck lanes
- Mixed-flow improvements
- Interchange improvements
- Truck climbing lanes
- ITS improvements/deployment
- Toll lanes and High occupancy toll lanes (HOT)

In addition to the above listed improvements it is recommended that significant increase in funding for arterial improvements and capacity enhancements be provided. These involve a combination of widening, signal prioritization and other Intelligent Transportation Systems (ITS) deployment and grade separation at critical high volume intersections to enhance the flow speed and capacity of the arterial.

## **TRANSIT**

The region's Transportation Commissions and transit providers should consider and implement the following strategies:

- Major expansion of bus rapid transit services throughout the Region.
- Development and adoption of a long-term strategy for integrating the planning of commercial, residential and recreational land-uses with the transportation system as well as increasing land-use intensities in areas with higher transit services and access.
- Inclusion of more mixed uses near transit services and facilities by local jurisdictions.
- Promotion of transit-oriented developments along the major transit corridors.
- Construction of new transit centers and park-and-ride facilities in areas that provide access to the freeway HOV network, transit corridors and express buses. Existing transit centers should be upgraded for multi-modal uses that support restructured transit services.

## **GOODS MOVEMENT**

The regional stakeholders consisting of both public and private sectors should work together to develop and implement the following strategies:

- A regional system of user-supported, dedicated facilities.
- Further development of truck-climbing lanes.
- Development of dedicated truck lanes
- Increase mainline track and intermodal rail yard capacity.

- Secure funding to implement capacity enhancement projects that would improve and expand freight railroad infrastructure, commuter rail facilities, and grade separations of highway-rail crossings.
- Major infrastructure improvement program at the region's ports that includes improvement and expansion of ground access, expansion of rail yards and utilization of ITS.
- Consider further development of "inland ports" that serve as cargo facilitation centers where a number of import, export, manufacturing, packing, warehousing, forwarding and customs could take place.

## AVIATION

The region's airport authorities must cooperate in formulation and implementation of a regional aviation strategy that will ensure efficient usage of capacity. This strategy represents a decentralized system that relieves pressure on constrained, urbanized airports and on the region's surface transportation infrastructure. The regional strategy contains:

- Support capacity expansion at major existing and potential airports to handle anticipated increases in passengers and cargo volume.
- Mitigate the effects of expanding airports and consider the reuse of former military airfields so that community impacts are minimized.
- Maximize air passenger and air cargo utilization of outlying airports in less-populated areas.
- Develop a "Consortium" through memoranda of understanding between all of the airports in the regional system. The agreements will establish a common framework for coordinating all airport master planning and facility construction consistent with an adopted Regional Aviation Plan. The Consortium would focus on on-airport operations and facilities, and would not have power of eminent domain.
- LAWA will develop an "Integrated Metropolitan Airport System Plan." This plan will detail how LAX, Ontario and Palmdale will work with each other and other regional airports in efficiently meeting regional aviation demand as defined in the RTP Regional Aviation Plan.
- LAWA will provide needed financial support to Palmdale and Ontario airports to construct new facilities and establish long-haul and international service through attractive pricing arrangements and other inducements.
- Palmdale will become a limited international airport, making all of LAWA's commercial airports international airports.
- LAWA will broker cooperation from airlines to provide more robust flight portfolios at Palmdale and Ontario, including long haul and international service.
- Agreements between LAWA and non-LAWA airports will be developed to promote further decentralization of the regional aviation system. Different roles and market niches for airports will be defined, so as to reduce competition and increase

cooperation and coordination between airports, and maximize utilization of available airport capacities in the Region.

- The agreements will establish a common framework for a regional “Airport Consortium” that will coordinate all airport master planning and facility construction consistent with an adopted Regional Aviation Plan.
- The Regional Airport Consortium will coordinate with the Maglev Joint Powers Authority to ensure seamless Maglev connections to airports, and increase air passenger ridership via Maglev through integrated fares and other market tools.

## **MAGLEV**

In coordination and cooperation with the public and private stakeholders, SCAG will:

- Complete the preliminary engineering for the Initial Operating Segment (IOS)
- Form a Joint Powers Authority to market the project to the public/private stakeholders
- Secure necessary funding for completion of the IOS
- Seek legislative support at the regional, State and federal levels for the Maglev deployment

## **PERFORMANCE MEASURES**

Various performance measures can be used to ascertain the effectiveness of the Action Plan. These measures include:

- Increase in the per capita transit ridership.
- Increase in carpooling
- Reduction of congestion delay
- Increase in bike lanes in high density mixed-use development
- Increase in average freeway speeds during peak periods

# APPENDIX

## D) MEASUREMENT / INDICATORS

### 1. ANALYSIS

#### 1) Performance Indicators, Measures and Outcome.

Performance Measures play a critical role in the development of the RTP. Performance measures quantify regional goals and provide a way to evaluate progress over time. The 2004 RTP is SCAG's third performance-based RTP. Starting in 1998, SCAG was the first Metropolitan Planning Organization (MPO) to rely extensively on performance measurement as a means to identify the most effective investments for the Region. The performance indicators for the 2004 RTP represent an evolution that builds on earlier successes and adds specificity and technical depth to the original indicators.

This section summarizes how well the 2004 RTP performs in meeting its adopted goals and satisfying State and federal requirements. For instance, the California Transportation Commission (CTC), following State and federal laws, requires that SCAG use "program level" transportation system performance measures that reflect goals adopted by the SCAG Regional Council. **Table \_\_\_\_\_** summarizes these adopted goals and their related performance outcomes. One or more performance measures were developed for each of these outcomes to quantify the Plan's performance.

Table \_\_\_\_\_  
**2004 RTP Goals and Related Performance Outcomes**

<i><b>RTP Goals</b></i>	<i><b>RTP Performance Measures</b></i>									
	<i><b>Mobility</b></i>	<i><b>Accessibility</b></i>	<i><b>Cost-Effectiveness</b></i>	<i><b>Reliability</b></i>	<i><b>Productivity</b></i>	<i><b>Safety</b></i>	<i><b>Preservation</b></i>	<i><b>Sustainability</b></i>	<i><b>Environment</b></i>	<i><b>Geographic Equity</b></i>
Maximize mobility and accessibility for all people and goods in the Region	✓	✓	✓							✓
Ensure travel safety and reliability for all people and goods in the Region	✓			✓		✓				✓
Preserve and ensure a sustainable regional transportation system							✓	✓		✓
Maximize the productivity of our transportation system	✓				✓					✓
Protect the environment, improve air quality and promote energy efficiency									✓	✓
Encourage land use and growth patterns that complement our transportation investments	✓	✓							✓	✓



## Mobility

The mobility performance outcome relies on two commonly used measures: speed and delay. Speed<sup>1</sup> and delay<sup>2</sup> were computed using SCAG's regional travel demand model with results as follows:

Performance Measure	Base Year 2000	Baseline 2030	Plan 2030
Average Daily Speed (mph)	35.9	31.9	36.2
Average Daily Delay (in millions)	2.2	5.4	3.2
Average Delay Per Capita (in minutes)	8.0	14.2	8.4
Average Daily Heavy Duty Truck Delays (in thousands)	71	242	165

I need a sentence/paragraph here summarizing what the table is showing.

## Accessibility

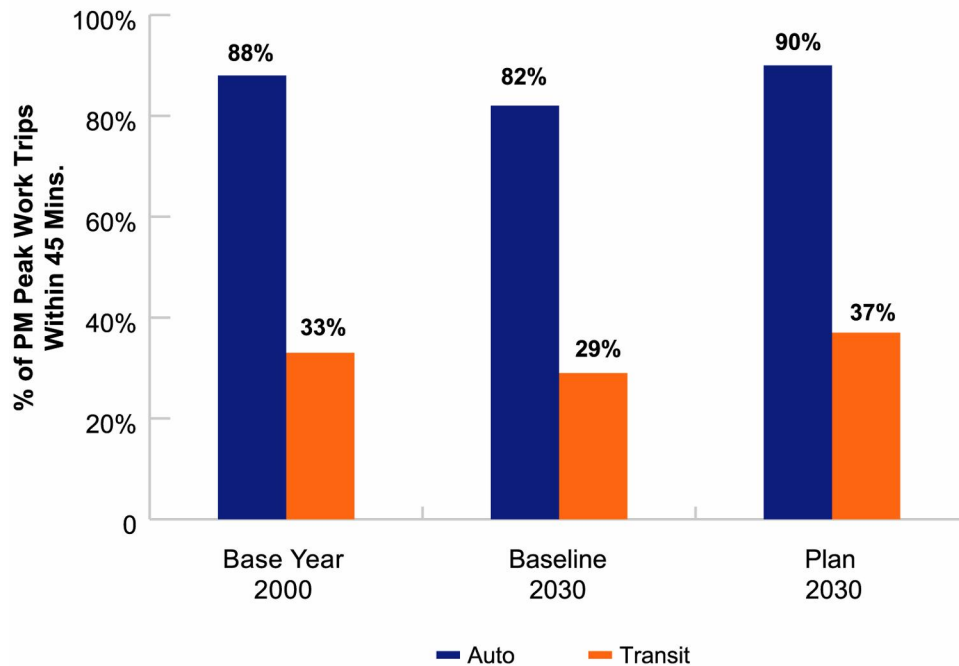
Accessibility measures how well the transportation system provides people access to opportunities. Opportunities can include jobs, education, medical care, recreation, shopping, or other activities that help improve people's lives. For the RTP, accessibility is defined as the percentage of the population who can travel between work and home within 45 minutes during the PM peak period. Access to employment is used as a reasonable proxy for access to all opportunities, since work trips make up a large percentage of total trips during commute periods. Figure 5.5 compares the Plan to Base Year and Baseline (No-Project) and presents the percent of work trips completed within 45 minutes for both automobiles and transit. The figure clearly shows that the Plan not only improves accessibility compared to the Baseline (No-Project), but it actually shows an improvement compared to Base Year conditions for both auto and transit. This is primarily due to the Land-Use integration strategy, which intensifies densities and focuses development close to work and along major transit corridors. Yet, transit accessibility still performs significantly worse than auto accessibility, which is a problem that will continue to challenge transportation planners and decision-makers in the Region.

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<sup>1</sup> Speed is the average speed experienced by travelers regardless of mode in miles per hour (mph)

<sup>2</sup> Delay is the difference between the actual travel time and travel time that would be experienced if a person traveled at the legal speed limit. This measure is report as person-hours of delay, which is presented here as a total and as delay per capita. The latter normalizes the results with the expected population growth during the Plan period (i.e. through 2030).

### SCAG Region Performance Analysis Auto and Transit Accessibility



### Reliability

The reliability outcome reflects the degree to which travelers experience variations in their trip times from day to day. As such, it captures the relative predictability of the public's travel time and focuses on how much mobility and accessibility vary from day to day. The reliability measure is calculated by using the statistical concept of the standard deviation. The indicator is computed by dividing the standard deviation of travel time for a given trip by the average travel time of that trip, measured over many days and weeks. **Table 5.2** shows how a traveler can use this indicator depending on the importance of arriving on time. For example, if a person's morning commute takes on average 26 minutes, but varies 15% from day to day, then he or she must plan the trip to account for additional time. **Table 5.2** shows that if this person wants to be 99% confident that he or she arrives on time, he or she must plan for 38 minutes of travel instead of 26.

Table 5.2

### Variability of Travel Time: Hypothetical Illustration

Trip (from, to)	Time Period	Average Travel Time	Variability of Travel Time	Travel Time Based on Level of Confidence of Arriving on Time		
				70%	95%	99%
Hypothetical Commute Trip	AM Peak	26 min.	15%	30 min.	34 min.	38 min.
	PM Peak	32 min.	25%	40 min.	48 min.	56 min.
	Off Peak	20 min.	10%	22 min.	24 min.	26 min.

This indicator is relatively new in transportation planning and operations, and exact models to compute and forecast it are not available. However, by using existing travel time data and research results, it is possible to estimate Plan impacts on reliability. Table 5.3 presents these results, which reflect the benefits derived from the investments that help respond more quickly and effectively to traffic accidents or provide traveler information. However, it is critical to continue to monitor this measure and improve the tools to forecast the impacts of such investments in future SCAG planning cycles.

Table 5.3

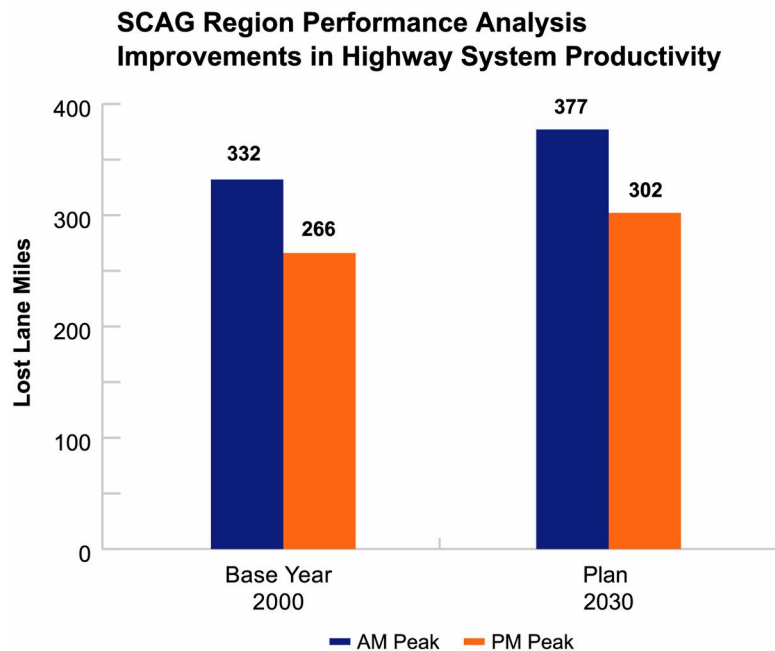
### SCAG Regional Performance Analysis Improvements in Travel Time Reliability

<i>Peak Period</i>	<i>Hour</i>	<i>Base Year 2000 Average Percent Variability of Travel Time</i>	<i>Plan 2030 Average Percent Variability of Travel Time</i>
	6 am to 7am	11%	10%
Morning Peak Period	7 am to 8 am	15%	13%
(6 am to 9 am)	8 am to 9 am	15%	13%
	3 pm to 4 pm	21%	19%
Afternoon Peak Period	4 pm to 5 pm	20%	18%
(3 pm to 7 pm)	5 pm to 6 pm	19%	17%
	6 pm to 7 pm	22%	20%

### Productivity

The productivity outcome reflects the degree to which the transportation system performs during peak demand conditions. It is a system efficiency measure. The productivity indicator is defined as the percent utilization during peak demand conditions. As an example, freeways are typically designed to carry 2,000 vehicles per lane per hour. However, in many locations on the Region's freeway system, vehicles weaving and merging in and out of traffic cause bottlenecks, which lead to significant reductions in capacity utilization. Again, using freeways as an example, the carrying capacity of a freeway lane can drop by as much as 50%, allowing only 1,000 vehicles per hour to pass. In effect, the system "loses" capacity, which can be estimated in terms of lost lane-miles.

Figure 5.6 summarizes the current estimate for productivity losses on the Region's freeway system and the expected improvements due to Plan investments. Maximizing the system's productivity is a critical goal of the RTP and the overall system management approach aims to recapture lost productivity. Note that the Plan improves productivity by committing to investments in State Highway operations discussed in Chapter 4. Transit productivity will also improve through increased ridership, which maximizes the number of seats occupied during peak demand conditions.



## Preservation

The preservation outcome reflects how well the Region is taking care of its multi-modal transportation infrastructure. **Figure 5.7** presents the total preservation costs through the year 2030 for State Highways, arterials and transit. The total cost for all three categories through 2030 adds up to more than \$40 billion.

## Safety

Improving safety by minimizing accidents is a critical outcome of the RTP. The safety indicators used to measure and track safety-related performance are:

- Fatalities per million persons
- Injuries per million persons
- Property damage accidents per million persons

State and regional transportation agencies dedicate funds to projects that specifically address safety deficiencies. However, it is not possible to predict the reduction in accident rates resulting from these investments. Hence, the safety results presented here are estimated based on current accident rate trends for the difference modes applied to projected levels of system use by mode. They represent a conservative estimate for safety benefits.

**Figure 5.9** compares safety indicators for the Base Year, Baseline (No Project), and Plan scenarios. The overall improvement is estimated based on overall accident rates by mode (e.g., auto, bus, and rail) and facility (e.g., freeways and principal arterials).

## Sustainability

A transportation system is sustainable if it maintains its overall performance over time with the same costs for its users. Sustainability, therefore, reflects how our decisions today affect future generations. The indicator for sustainability is the total inflation-adjusted cost per capita to maintain overall system performance at current conditions. The performance measures presented in this chapter show that the planned transportation system in 2030 will perform approximately as well as it does today. However, the overall cost of the plan represents a \$20 per capita per year increase to cover preservation and operations investments. Note that despite this incremental cost, the Plan performs extremely well given the expected population and travel growth in the Region.

## Cost Effectiveness

Cost effectiveness reflects the degree to which transportation expenditures in the Plan yield benefits that the transportation users experience. It attempts to measure how much “bang for the buck” is received from the Plan. The indicator for cost-effectiveness is the benefit-cost ratio. Benefits are divided into several categories as follows:

- Delay savings
- Safety improvements
- Air Quality improvements
- Reductions in vehicle operating costs

For each of these categories, models are used to estimate the benefits of the Plan compared to Baseline (No-Project). The benefits are converted into dollars, added together, and divided by the total incremental costs of the Plan’s transportation improvements. [Table 5.4](#) summarizes the results of the benefit-cost analysis.

## Mobility Benefits Attributable to the Land Use Strategies

Significant mobility improvements result from the Growth Vision approach of focusing development in centers and along transportation corridors, promoting transit-oriented development, attempting to achieve a job-housing balance, as well as using other strategies. Compared to Baseline (No Project), the Plan reduces VMT by 15 million vehicles miles, of which almost 35% result from incorporating land-use strategies in support of transportation investments ([see Figure 5.10](#)). Notable benefits are also achieved in reducing vehicle hours traveled (-12%) and vehicle hours of delay (-8%).

## Economic Impact Analysis

### Decline in Employment Growth Rate

The 2004 RTP growth forecast foresees a sharp and unprecedented decline in growth rate, and change and makeup the labor force in the Region—particularly after 2010 as a large number of “Baby Boomers” start to reach retirement age. The share of total population and households of

elderly and retired persons in the Region is projected to double from today. These households are more likely to be headed by non-minority (i.e., non-Hispanic Whites) householders. “Baby Boomers” born between 1946 and 1964 will change the shape of our population structure from a pyramid, with fewer older persons at the top, to a column with retired and working-aged populations being similar in size.

Unlike the 1960 to 2000 period, the Region will not have a large labor force to support a much smaller retired population. Instead, the Region will experience a situation where a smaller labor force made up of minority households will be supporting a large retired population made up of non-minority households.

## **2. ACTIONS**

### **A) EIR Mitigation Measures**

#### **Mitigation Measures from the 2004 Regional Transportation Plan (RTP) Program Environmental Impact Report (PEIR) that Reflect Regional Council Policy**

SCAG is identified in the PEIR for the 2004 RTP as a party responsible for implementation of the mitigation measures listed below. The portions of measures that specifically address the Regional Comprehensive Plan, a SCAG committee, or other SCAG project are highlighted.

**MM 3.1-4a:** SCAG’s **Growth Visioning program** and the forthcoming **Regional Growth Vision** will be used to build a consensus in the region to support changes in land use to accommodate future population growth while maintaining the quality of life in the region.

**MM 3.2-1a:** SCAG shall work with its member agencies to implement growth strategies to create an urban form designed to utilize the existing transportation networks and the transportation improvements contained in the 2004 RTP, enhancing mobility and reducing land consumption.

**MM 3.2-4a:** SCAG’s **Growth Visioning program** and the forthcoming **Regional Growth Vision** shall be used to work toward building a consensus in the region to support changes in land use to accommodate future population growth while maintaining the quality of life in the region.

**MM 3.3-1b:** SCAG shall encourage education about and implementation of California’s Parking Cash Out law as a means of further reducing VMT.

**MM 3.3-3a:** SCAG shall encourage the ports to extend their operating hours in order to reduce heavy-duty truck traffic during peak periods, thereby reducing the VHT these trucks spend in delay.

**MM 3.4-1b:** The 2003 SCAQMP control measures consist of 1) SCAQMD's Stationary and Mobile Source Control Measures; 2) State and Federal Source Control Measures proposed by CARB; and 3) Transportation Strategy and Control measures provided by SCAG. These control measures are based on the implementation of short-term, defined measures as well as long-term measures, which will rely on new technologies to further reduce emissions. The SCAQMP includes estimated emissions reductions based on these short-term and long-term programs. The transportation improvements proposed for the short-term emissions reductions are grouped in the SCAQMP under Transportation Control Measure (TCM) project categories and include the following measures:

- High Occupancy Vehicle (HOV) Measures: New HOV lanes, HOV bypasses and connectors, interchanges, High Occupancy Toll (HOT) Lanes;
- Transit and System Management Measures: Transit, Intermodal Transfer Facilities, Non-motorized Transportation Mode Facilities
- Information-based Transportation Strategies: Marketing for Rideshare and other services, Intelligent Transportation Systems, Telecommuting Programs and Real-time rail, transit or freeway information systems.

The 2004 RTP has been prepared to facilitate implementation of the transportation control measures outlined in the 2003 SCAQMP. The 2004 RTP incorporates both the capital and non-capital improvements recommended by the SCAQMP.

Air Resources Board's (ARB) strategy, outlined in the South Coast SIP, includes the following elements:

- Set technology forcing new engine standards;
- Reduce emissions from the in-use fleet;
- Require clean fuels, and reduce petroleum dependency;
- Work with U.S. EPA to reduce emissions from federal and state sources; and
- Pursue long-term advanced technologies measures.

**MM 3.5-4a:** SCAG shall encourage airport sponsors to implement voluntary curfews, changes in aircraft operations, adjacent land use compatibility, and physical noise buffers for aircraft and vehicles, where appropriate and feasible, to minimize noise impacts of aviation activities.

**MM 3.7-9a:** Future impacts to biological resources shall be minimized through cooperation, information sharing, and program development during the update of the **Open Space and Conservation chapter of SCAG's Regional Comprehensive Plan and Guide** and through **SCAG's Energy and Environment Committee**. SCAG shall consult with the resource agencies, such as U.S. Fish and Wildlife Service and California Department of Fish and Game shall be consulted during this update process.

**MM 3.8-5a:** Future impacts to cultural resources shall be minimized through cooperation, information sharing, and program development of SCAG's **Regional Comprehensive Plan and Guide** and through SCAG's **Energy and Environment Committee**. SCAG shall consult with the resource agencies, such as the Office of Historic Preservation, during this update process.

**MM 3.10-1a/3a:** SCAG shall encourage the U.S. Department of Transportation, the Office of Emergency Services, and the California Department of Transportation to continue to conduct driver safety training programs and encourage the private sector to continue conducting driver safety training.

**MM 3.10-1b/3b:** SCAG shall encourage the U.S. Department of Transportation and the California Highway Patrol to continue to enforce speed limits and existing regulations governing goods movement and hazardous materials transportation.

**MM 3.10-1c/3d:** SCAG shall encourage federal, state, and local efforts to educate businesses on the use of less dangerous alternatives to hazardous materials.

**MM 3.11-2d:** SCAG shall encourage state and federal lawmakers and regulatory agencies to pursue the design of programs to either require or incentivize the expanded availability and use of alternative-fuel vehicles to reduce the impact of shifts in petroleum fuel supply and price.



## **RECOMMENDATIONS**

### **SYSTEM IMPROVEMENTS**

- ◆ The Region must maximize the productivity of its transportation system through:
  - Flow-improving infrastructure modifications – also referred to as physical operational improvements
  - Freeway service patrol to facilitate removal of stalled vehicles.
  - Transportation management systems, including: incident management systems; traveler information systems; ramp metering systems; arterial signal management systems;
- ◆ The region must implement physical improvements to the transportation system to make it safer by investing in safety improvements such as the extension or addition of auxiliary or merging lanes. This will allow a safer transition in traffic flow.

### **TDM and NON-MOTORIZED**

- ◆ Maintain and increase the existing rideshare market and increase the number of carpools annually through increasing programming of public funding.
- ◆ Formalize and expand partnerships among public and private sector stakeholders to improve delivery of vanpool services regionally
- ◆ Establish a dedicated funding source for planning and implementing vanpool programs and services
- ◆ Expand the provision of vanpool services in the Region through an increase in dedicated public-sector staffing and resources
- ◆ Facilitate a regionally coordinated marketing strategy among the public and private sectors to enhance vanpool programs, increase ridership and improve outreach efforts
- ◆ Formalize and expand partnerships among public and private sector stakeholders to increase opportunities for wage and salary workers regionally to telecommute in lieu of daily commuting
- ◆ Explore the opportunity to develop and to disseminate educational programs at the county and community level that promote consumers' use of non-motorized travel modes for nonwork trips made during commute hours
- ◆ Explore partnerships among public and private sector providers of medical, shopping, school, recreation and related services and programs to identify alternative modes of travel

to their establishments and to evaluate their ability to offer consumer services during non-commute hours

- ◆ Implement bikeway expansion projects, create a bicycle and pedestrian-friendly transportation environment, induce mixed-use development that promotes biking and walking.

## **LAND USE**

- ◆ Use infill where appropriate to revitalize underutilized development sites
- ◆ Focus growth along transit corridors and nodes to utilize available capacity
- ◆ Provide housing opportunities near job centers, and job opportunities, when appropriate, in housing-rich communities
- ◆ Provide housing opportunities to match changing demographics
- ◆ Ensure adequate access to open space
- ◆ Change land-use to correspond to the implementation of a decentralized regional aviation strategy and its consequent short- and long-term job creation
- ◆ Change land-use to correspond to the implementation of regionally significant major transportation projects and their consequent short- and long-term job creation

## **HIGHWAYS AND ARTERIALS**

- ◆ Projects that enhance safety and security
- ◆ Projects that fill significant gaps in the freeway and HOV system (examples from the 2001
- ◆ RTP include the SR-710 gap closure, SR-210 extension, I-10 HOV lane, and the I-605 HOV lane)
- ◆ Projects that relieve significant bottlenecks (examples include truck climbing lanes, mixed flow widening and reconfigurations like the I-215 in San Bernardino, mixed flow continuity projects, and completion of the HOV lanes on I-405 through the Sepulveda Pass)
- ◆ Projects that support improved operational performance (examples include auxiliary lanes and interchange improvements such as better ramps)
- ◆ Projects that improve system connectivity

- ◆ Projects that improve access to airports, cargo facilities, and intermodal centers
- ◆ Projects that maximize efficient use of existing capacity, such as Traffic Management Centers, ramp metering, signal synchronization and other ITS
- ◆ Projects to maintain and preserve the current investment in the highway system
- ◆ Advancing long-range study corridors from the 2001 RTP in high-demand and/or highgrowth areas, based upon the findings of the RSTIS process
- ◆ Projects that support land-use goals

## **Arterial Improvements**

In addition to the specific arterial improvements identified under the Smart Street Improvement Program, this Plan proposes a significant increase in funding for arterial improvements and capacity enhancements.

### **The Strategic Arterial**

Improvement concept could involve a combination of widening, signal prioritization and other Intelligent Transportation Systems (ITS) deployment and grade separation at critical highvolume intersections to enhance the flow speed and capacity of the arterial.

## **TRANSIT**

The proposed transit program recommends building on the success of existing BRT lines and includes a major expansion of bus rapid transit services throughout the Region.

The regional transit program calls for increased and better coordination between transit and land-use planning. The Region must develop and adopt a long-term strategy for integrating the planning of commercial, residential and recreational land-uses with the transportation system as well as increasing land-use intensities in areas with higher transit services and access.

The Region must focus on encouraging local jurisdictions to include more mixed uses near transit services and facilities.

The regional transit program calls for the local and regional transit and planning agencies to promote transit-oriented developments cooperatively along the major transit corridors.

To encourage the use of transit and ridesharing further, new transit centers and park-and-ride facilities will be constructed in areas that provide access to the freeway HOV network, transit corridors and express buses. Existing transit centers can be upgraded for multi-modal uses that support restructured transit services.

## **GOODS MOVEMENT**

The development of a regional system of user-supported, dedicated facilities offers a viable and potentially self-financing solution for mitigating congestion and reducing mobile source emissions arising from surface transportation operations in Southern California.

## AVIATION

Support capacity expansion at major existing and potential airports to handle anticipated increases in passengers and cargo volume.

- ❖ Mitigate the effects of expanding airports and consider the reuse of former military airfields so that community impacts are minimized.
- ❖ Maximize air passenger and air cargo utilization of outlying airports in less-populated areas.

The Regional Aviation Plan requires that an airport “Consortium” be developed through memoranda of understanding between all of the airports in the regional system. The agreements will establish a common framework for coordinating all airport master planning and facility construction consistent with an adopted Regional Aviation Plan. The Consortium would focus on on-airport operations and facilities, and would not have power of eminent domain.

LAWA will develop an “Integrated Metropolitan Airport System Plan.” This plan will detail how LAX, Ontario and Palmdale will work with each other and other regional airports in efficiently meeting regional aviation demand as defined in the RTP Regional Aviation Plan.

- ❖ LAWA will provide needed financial support to Palmdale and Ontario airports to construct new facilities and establish long-haul and international service through attractive pricing arrangements and other inducements.
- ❖ Palmdale will become a limited international airport, making all of LAWA’s commercial airports international airports.
- ❖ LAWA will broker cooperation from airlines to provide more robust flight portfolios at Palmdale and Ontario, including long-haul and international service.
- ❖ Agreements between LAWA and non-LAWA airports will be developed to promote further decentralization of the regional aviation system. Different roles and market niches for airports will be defined, so as to reduce competition and increase cooperation and coordination between airports, and maximize utilization of available airport capacities in the Region.
- ❖ The agreements will establish a common framework for a regional “Airport Consortium” that will coordinate all airport master planning and facility construction consistent with an adopted Regional Aviation Plan.
- ❖ The Regional Airport Consortium will coordinate with the Maglev Joint Powers Authority to ensure seamless Maglev connections to airports, and increase air passenger ridership via Maglev through integrated fares and other market tools.

## Goals and Policies

Building on the substantial efforts that went into the development of previous RTPs, the goals reflect the Region's focus on a balanced approach to transportation planning and decision-making:

- Maximize mobility and accessibility for all people and goods in the region
- Ensure travel safety and reliability for all people and goods in the region
- Preserve and ensure a sustainable regional transportation system
- Maximize the productivity of our transportation system
- Protect the environment, improve air quality and promote energy efficiency
- Encourage land use and growth patterns that complement our transportation investments

The goals are in no particular order and demonstrate the need to balance many priorities in the most cost-effective manner. These priorities are identified in the following:

- ❖ The Region's vast investments in multi-modal transportation infrastructure must be protected. This infrastructure is maturing and requires attention and maintenance. The Region cannot afford to replace the existing infrastructure and must protect it for future generations.
- ❖ A maturing system dictates an increased operational focus that leverages technology to maximize the system's productivity. This same investment will also minimize the variations of travel time, and increase reliability, due to incidents, weather, and other factors. The Region cannot expand the transportation system significantly, so the existing system must be utilized to its fullest, maximizing its reliability. The vitality of the Region's economy is inextricably linked to efficient and reliable transportation.
- ❖ Air Quality for the Region's residents must be improved and meet federal regulations. Not doing so would undermine the health of our population and risk losing billions of federal funding to the Region.
- ❖ The investments in the RTP must address travel safety and modal balance; recognize the importance of providing safe travel choices; meet the needs of transit dependents and the goods movement community; and provide connections among the highway system, ports, and airports.
- ❖ For the first time, the RTP also integrates land-use policies as a means to influence transportation performance and the economy. Without such integration, transportation needs in the future will significantly outpace the ability to pay for them.

- ❖ The RTP must address all these priorities and more in the most cost-effective manner so that mobility and accessibility is maximized for people and goods.

The following policies were adopted by the SCAG Regional Council to guide the development of the 2004 RTP further and reflect the transportation priorities for the Region:

- Transportation investments shall be based on SCAG's adopted Regional Performance Indicators.
- Ensuring safety, adequate maintenance, and efficiency of operations on the existing multi-modal transportation system will be RTP priorities and will be balanced against the need for system expansion investments.
- RTP land use and growth strategies that differ from currently expected trends will require a collaborative implementation program that identifies required actions and policies by all affected agencies and subregions.
- HOV gap closures that significantly increase transit and rideshare usage will be supported and encouraged, subject to Policy #1.
- Progress monitoring on all aspects of the Plan, including timely implementation of projects, programs, and strategies, will be an important and integral component of the Plan.

## **SCAG Policies per the 2004 Regional Transportation Plan, Compass Growth Visioning, the Regional Comprehensive Plan and Guide, and Regional Council Resolutions**

### **2004 Regional Transportation Plan**

#### **RTP Goals**

- Maximize **mobility** and **accessibility** for all people and goods in the region.
- Ensure travel **safety** and **reliability** for all people and goods in the region.
- **Preserve** and **ensure** a sustainable regional transportation system.
- Maximize the **productivity** of our transportation system.
- Protect the **environment**, improve air quality and promote energy efficiency.
- Encourage **land use and growth patterns** that complement our transportation investments.

## RTP Policies

- Transportation investments shall be based on SCAG's adopted Regional Performance Indicators.
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## **Regional Council Resolutions**

### **Transportation**

#### **Resolution 96-357-1-B**

##### **Antelope and San Joaquin Valleys High Speed Rail Route**

Supports route from Los Angeles through Palmdale and Lancaster and then on through Bakersfield and Fresno up to the Bay Area and Sacramento.

#### **Resolution 95-350-3**

##### **Seismic Retrofitting of Toll Bridges**

Calls upon the California Transportation Commission to program and fund all seismic retrofit projects on toll bridges in California.

#### **Resolution 94-343-4**

##### **Congestion Pricing Pilot Program**

Approves participation with Caltrans to undertake the development of an implementation strategy for congestion pricing.